



Reply to
Attention of:

DEPARTMENT OF THE ARMY
US ARMY ENGINEER DIVISION, SOUTHWESTERN
1100 COMMERCE STREET, SUITE 831
DALLAS, TEXAS 75242-1317

CESWD-PDS-P

22 FEB 2009

MEMORANDUM FOR Commander, Galveston District

SUBJECT: Review Plan Approval for the White Oak, Buffalo Bayou Sec 211(f) General Reevaluation Report

1. References:

- a. EC 1105-2-408, 31 May 2005, subject: Peer Review of Decision Documents.
- b. Memorandum, CECW-CP, 30 March 2007, subject: Peer Review Process.

2. The enclosed Review Plan for the White Oak, Buffalo Bayou Sec 211(f) General Reevaluation Report has been prepared in accordance with referenced guidance.

3. This plan has been made available for public comment, and the comments received have been incorporated. It has been coordinated with the Flood Damage Reduction Planning Center of Expertise of the South Pacific Division which is the lead office to execute the plan. The Review Plan indicates External Peer Review.

4. I hereby approve this Review Plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this plan or its execution will require new written approval from this office. For further information on this issue please contact Brent Hyden, CESWD-PDF at (469) 487-7033.

A handwritten signature in black ink, appearing to be "K. Cox", is located above the name of the signatory.

KENDALL P. COX
Brigadier General, USA
Commanding

Encl

PROJECT REVIEW PLAN INDEPENDENT TECHNICAL REVIEW AND EXTERNAL PEER REVIEW

WHITE OAK BAYOU FEDERAL FLOOD CONTROL PROJECT HARRIS COUNTY, TEXAS HARRIS COUNTY FLOOD CONTROL DISTRICT/GALVESTON DISTRICT-USACE

1. Purpose.

This document presents an analysis of the process that assures quality products for the White Oak Bayou Federal Flood Control Project, Harris County, Texas, General Reevaluation Report. The project study is being performed by the Harris County Flood Control District (HCFCD) under Section 211(f) of the Water Resources Development Act of 1996. This QC/ITR Plan defines the responsibilities and roles of members of the study and technical review team. This QC/ITR plan is in compliance with the Galveston District (SWG) Quality Assurance (QA) Plan. The basis for the QA Plan is the SWG Quality Management Plan. The QA Plan will be followed in verifying that the QC process operates as planned.

2. Applicability.

This document provides the QC Plan for the General Reevaluation Study. It identifies quality control processes and independent technical review for all work to be conducted under this study authority, including in-house, sponsor and contract work.

3. References.

- EC 1105-2-408 "Peer Review of Decision Documents", dated May 31, 2005
- ER 1105-2-100 "Planning Guidance Notebook & Appendices D, F, G and H"
- Galveston District Quality Management Plan, dated ---

4. General.

A resolution adopted on April 20, 1948 by the House Public Works Committee of the U.S. House of Representatives authorized a comprehensive flood control survey of Buffalo Bayou and Tributaries, Texas. The first Federal Flood Control Project for White Oak Bayou was authorized by the Flood Control Act of 1954 for Buffalo Bayou and Tributaries. Construction of 8.6 miles of channel improvements was completed in 1970. The second Federal Flood Control Project for White Oak Bayou was authorized by the Flood Control Act of 1965 for Buffalo Bayou and Tributaries. This authorized project was completed in 1976 and consisted of a 2.1 mile extension of the first Federal project. The local sponsor for the project is the HCFCD.

The Upper White Oak Bayou project was authorized by the Water Resources Development Act of 1986 (WRDA 86) (Public Law 99-662) based on the 1976 Interim Report on Upper White Oak Bayou (finalized in 1979). The project authorization is currently in the inactive category. The authorized project included the following features:

- Channel enlargement, rectification, and partial paving of 9.2 miles along White Oak Bayou upstream of the existing Federal channel, 4.9 miles along Cole Creek, and 4.5 miles along Vogel Creek;
- Nonstructural floodplain management;
- Aesthetic and beautification features; and
- Construction of a recreation development plan on existing flood control rights-of-way along White Oak Bayou to include 3.8 miles of hike and bike trails and a neighborhood park.

In 1996, Section 211 of WRDA 96 authorized the HCFCD to develop a flood improvement plan on White Oak Bayou. The HCFCD began a planning study for White Oak Bayou in coordination with the United States Army Corps of Engineers (USACE) with the intent of producing a feasibility report. HCFCD submitted a 905(b) Analysis Expedited Reconnaissance Study Report, dated January 19, 1999 under the authority of Section 211(f) of WRDA 96, to the Commander, USACE. USACE reviewed the analysis and stated in a letter dated March 19, 1999 that the analysis is generally consistent with the requirements for reports prepared under the authority of Section 905(b) of WRDA 86. USACE concluded that the report provided sufficient basis to indicate Federal interest in conducting feasibility phase studies.

In March 2002, HCFCD received an opinion from the USACE Headquarters that Section 211 of WRDA 96 and Section 101 of WRDA 90 provided adequate authorization to construct an alternative to the existing authorized flood control project and that no congressional authorization would be required as long as the Assistant Secretary of the Army, Civil Works (ASA(CW)) approved the recommended plan. For this reason, the local sponsor effort is considered a General Reevaluation Study and the product is a General Reevaluation Report (GRR).

The general reevaluation study was undertaken to determine whether flood damage reduction benefits produced by channel modifications along White Oak Bayou are sufficient to offset the costs and environmental consequences of the improvement. During study efforts, close coordination has been maintained with resource agencies, interested parties, and local interests. Periodic public meetings have been scheduled.

5. Review Requirements.

Pursuant to EC 1105-2-408, projects which will not generate a report for Congressional Authorization are not subject to Peer Review Policy. Regardless, SWD and SWG have decided to submit this Peer Review plan in the best interests of compliance with the intent of transparency behind the policy. The draft GRR will need to have a peer review team assigned by the Planning Center of Expertise (PCX) for Flood Risk Mitigation Projects for the performance of ITR (Internal Technical Review). It is anticipated that this team will be assigned by CESP or to CESWD-SWT acting on behalf of the PCX. It is further anticipated that an External Peer Review (EPR) be conducted based on the scale of costs and benefits for the project. This EPR is inherent to the conduct of this 211(f) project and will be conducted in the normal course of the study by the Sponsor, their study contractor, and the third party Review contractor. No separate certification of EPR is required beyond the level necessary for ITR.

As a result, the peer review will focus on:

- Review of the planning process and criteria applied.
- Review of the methods of preliminary analysis and design.
- Compliance with client, program and NEPA requirements.
- Completeness of preliminary design and support documents.
- Spot checks for interdisciplinary coordination.

Identification of Project Risks: Project risks are believed to be relatively low since there is virtually no public controversy, potential for project failure is small, there is no new science involved in the project, and all predictions of outcomes have a low level of uncertainty. All techniques which will be used in final implementation have been replicated elsewhere in the United States and other parts of the world for decades. However, in any large structural flood control project, there is moderate long-term risk to population and assets which reside or may relocate into areas protected by structural flood control improvements. Current estimate of construction is \$155M.

The PCX shall furnish all personnel, equipment, materials, and supplies necessary to perform ITR for the on-going reevaluation study being performed for the proposed channel improvements along White Oak Bayou.

The PCX will provide technical and policy review and assistance to ensure successful execution of the quality control process for the products developed during the formulation study phase. The following disciplines will be required:

- Plan Formulator
- Economist
- Environmentalist
- Engineers – General, Cost Estimator, H&H, GeoTech
- Real Estate

The following tasks will be performed during the ITR:

A. Team Leader and one to two team members will meet with District staff and local sponsor and their contractor to review project and discuss major assumptions, analyses, and calculations

B. Team Leader and one to two members will attend one Federal Studies Coordination Team (FSCT) meeting at District. FSCT was developed for Section 211 projects being evaluated during feasibility analysis and made up of a multi-disciplinary group. This group includes members from all disciplines within the District, a representative of the project sponsor, and others, as necessary. It is the goal of this team to insure expedient and open communication between all team members and disciplines to insure timely completion of the study. The PCX representative will attend one FSCT meeting to discuss major assumptions, analyses, and calculations to avoid significant comments later that could adversely affect project schedules and costs. Subsequent attendance of FSCT meetings can be by teleconference.

C. Review FSCT meeting minutes in regard to White Oak Bayou. FSCT meeting minutes will be provided electronically on a monthly basis. Review the minutes and provide comments citing appropriate Corps of Engineers regulations for issues that are not in compliance with established Corps policies and regulations. Identify any other potential errors, omissions, or issues of a technical or policy nature.

D. Conduct ITR (scheduled for September 08) for the draft General Reevaluation Report for Alternative Formulation Briefing tentatively scheduled for March 09. Perform a review of the read-ahead information. Provide written comments citing appropriate USACE regulations for issues that are not in compliance with established policies and regulations. Identify any other potential errors, omissions, or issues of a technical or policy nature.

District will be responsible for all legal reviews of GRR.

Points of Contact: Robert Van Hook, Planning Lead, Galveston District – 409/766-3024
 SPD –
 CPT David Bryant, Project Manager, Galveston District – 409/766-3135

6. Review Process.

This project is being performed under Section 211(f), so there are significant differences from the way “normal” USACE studies are conducted. In this case, the Sponsor uses one contractor to perform the study, and another independent contractor to review it. Then it is submitted to the USACE-SWG for the ITR process. It is envisioned that the intent and principles of External Peer Review inherent to EC 1105-2-408 are intrinsically met through the normal process of executing a 211(f) project.

It is anticipated that the Review Process will be concurrent with performance of the GRR.

EPR will be performed by the Sponsor (or their designee) integral to the other efforts under the GRR. This will meet the full scope of the EC 1105-2-408, as applied to cover drafts of the General Reevaluation Report, Engineering Appendix, Economic Appendix, Cost Appendix, and Environmental Assessment. Peer Review will be performed under the auspices of the FSCT and in coordination with the PCX.

7. Cost.

The cost of the ITR is estimated to be about \$50,000 and construction is estimated to cost \$155 million.

8. Review Schedule.

Review schedule is as follows:

<u>Task</u>	<u>Start Date</u>	<u>Finish Date</u>
Develop ITR Plan	Apr 08	Jun 08
PCX Approves ITR Plan or Assigns ITR Team	Jul 08	Aug 08
ITR Review of Documents	Sep 08	Nov 08
Coordination of Comments	Dec 08	Jan 09
ITR Certification		Jan 09

9. Peer Review Plan.

The components of the Peer Review Plan were developed pursuant to the requirements of EC 1105-2-408.

A. Basic Information

The decision documents that will be the focus of the peer review process are the drafts of the GRR, Engineering Appendix, Economic Appendix, Cost Appendix, and Environmental Impact Statement for White Oak Bayou. The purpose of the documents will be to begin the approval process leading to approval from the ASA (CW) and Federal funding for construction of the identified project.

The District Project Delivery (PDT) will be comprised of:

<u>Name, Org. & Discipline</u>	<u>Phone</u>	<u>E-Mail</u>
CPT David Bryant Project Manager CESWG-PM-J	(409) 766-3135	david.h.bryant@usace.army.mil
Robert Van Hook Planning Lead CESWG-PE-PL	(409) 766-3024	robert.c.vanhook@usace.army.mil
Christy Sorrels Economist CESWG-PE-PL	(409) 766-3853	christy.a.sorrels@usace.army.mil
George Dabney Environmental Lead CESWG-PE-PR	(409) 766-6345	george.v.dabney@usace.army.mil

Design Project Engineer (409) 766-
CESWG-EC-EP

General Engineer (409) 766-
CESWG-EC-EG

Jackie Lockhart (409) 766-3053 jacqueline.f.lockhart@usace.army.mil
Cost Engineer
CESWG-EC-E

Justo Pena (409) 766-3106 justo.z.pena@usace.army.mil
Hydraulic Engineer
CESWG-EC-EH

(409) 766-
Geotechnical Engineer
CESWG-EC-ES

Sal Arcidiacono (409) 766-3803 salvatore.j.arcidiacono@usace.army.mil
Real Estate
CESWG-RE-A

The ITR Team will be comprised of:

<u>Name, Org, & Discipline</u>	<u>Phone</u>	<u>E-Mail</u>
Planning		
Economics		
Coastal Environmental		
General Engineering		
Cost Engineering		
H&H Engineering		
Geotechnical		
Real Estate		

B. Scientific Information

It is anticipated that the GRR will contain no novel or influential scientific information.

C. Timing

The Peer Review process is envisioned to be performed concurrently throughout the direction of the GRR.

D. EPR Process

According to EC 1105-2-408, External Peer Review is not required for projects which will not generate a Report for Congressional authorization. But in the spirit of public transparency intended by the EC and the total estimated Project Cost, External Peer Review processing is envisioned at this time. EPR activities will be conducted through the course of the study by the Sponsor's contracted consultant. Since this project is being performed under Section 211 (ie by the sponsor, using a contractor they have selected, and with their funding subject to Fed reimbursement) it is envisioned that sponsor contractor activities will be sufficient to meet the intent of public input.

E. Public Comment

Public involvement program has been established.

F. Dissemination of Public Comment

No formal public comments are anticipated.

G. Reviewers

It is anticipated that four to seven reviewers total should be available in the following disciplines:

- 1) Planning
- 2) Economics
- 3) Coastal Environment
- 4) General Engineering
- 5) Cost Engineering
- 6) Hydrology and Hydraulic Engineering
- 7) Geotechnical
- 8) Real Estate

H. Review Disciplines

The expertise that should be brought to the review team includes the following:

- 1) Planning – The reviewer should have recent experience in reviewing Plan Formulation processes for multi-objective studies and be able to draw on “lessons learned” in advising of best practices.
- 2) Economics – The reviewer should have a solid understanding of Economic Models and their application to flood damage reduction.
- 3) Environment – The reviewer should have a solid background in environmental ecology and issues.
- 4) General Engineering – The reviewer should have solid knowledge of flood damage reduction channel design.
- 5) Cost Engineering – The reviewer should have extensive knowledge of cost estimating and Mii cost estimates.
- 6) Hydrology and Hydraulic Engineering – The reviewer should have extensive knowledge of flood damage reduction modeling and coastal hydrology.
- 7) Geotechnical – The reviewer should have extensive knowledge of coastal geomorphology.
- 8) Real Estate – The reviewer should have extensive knowledge of real estate requirements for flood damage reduction projects.

I. EPR Selection

An External Peer Review is anticipated for this study concurrent and inherent to ITR.

J. Public Peer Review

While no formal Public Peer Review is included in the current schedule and budget, it is likely that the study will receive review from interested parties in the White Oak Bayou area. Their input and comments will be welcome.